

**Minimization and Mitigation Measures for Protection and Restoration in Watersheds with Coho Salmon**

This version is an outgrowth/update of previous work presented to the Board on 1/10/07.

Yellow highlighted sections are added enhancements necessary for Coho, per the Commission's instructions.

Non-highlighted portions are the T or I rules. All are contained in a stand alone portion of the rules that do not alter existing T or I. No work has been on the definitions, etc.

1 **Adopt New 14 CCR §§ 916.9.1 and 936.9.1 Intent and Scope of Application of**

2 **Minimization and Mitigation Measures for Protection and Restoration in**

3 **Watersheds with Coho Salmon**

4 In addition to all other District Forest Practice Rules, the following

5 requirements shall apply in any watershed with coho salmon:

6 (a) The minimization and mitigation measures for protection and  
7 restoration in watersheds with coho salmon are intended to serve the  
8 following purposes:

9 (1) To facilitate the process of obtaining incidental take permits for  
10 state-listed coho salmon from DFG for timber operations under the California  
11 Endangered Species Act (Fish & G. Code, § 2050 et seq.);

12 (2) To minimize potential cumulative effects of timber operations in  
13 watersheds with coho salmon for the state's timber harvest permitting  
14 program; and

15 (b) The scope of application of the minimization and mitigation measures  
16 for protection and restoration in watersheds with coho salmon is as follows:

17 (1) In addition to all other District Forest Practice Rules, in any  
18 watershed with coho salmon, the minimization and mitigation measures for  
19 protection and restoration in watersheds with coho salmon shall apply to all  
20 timber operations where DFG determines that take will, or is likely to result  
21 from such proposed timber operations, unless an incidental take of coho  
22 salmon is already authorized as specified under 14 CCR § 916.9.2

23 [936.9.2](q).  
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1     **(a)** GOAL - Every timber operation shall be planned and conducted to prevent  
2 deleterious interference with the watershed conditions that primarily limit  
3 the values set forth in 14 CCR § 916.2 [936.2](a) (e.g., sediment load  
4 increase where sediment is a primary limiting factor; thermal load increase  
5 where water temperature is a primary limiting factor; loss of instream large  
6 woody debris or recruitment potential where lack of this value is a primary  
7 limiting factor; substantial increase in peak flows or large flood frequency  
8 where peak flows or large flood frequency are primary limiting factors). To  
9 achieve this goal, every timber operation shall be planned and conducted to  
10 meet the following objectives where they affect a primary limiting factor:

11         **(1)** Comply with the terms of a Total Maximum Daily Load (TMDL) that has  
12 been adopted to address factors that may be affected by timber operations if  
13 a TMDL has been adopted, or not result in any measurable sediment load  
14 increase to a watercourse system or lake.

15         **(2)** Not result in any measurable decrease in the stability of a  
16 watercourse channel or of a watercourse or lake bank.

17         **(3)** Not result in any measurable blockage of any aquatic migratory  
18 routes for coho salmon.

19         **(4)** Not result in any measurable stream flow reductions during critical  
20 low water periods except as part of an approved water drafting plan pursuant  
21 to 14 CCR § 923.9.2(r) [936.9.2(r)].

22         **(5)** Consistent with the requirements of 14 CCR § 916.9(i) and 14 CCR §  
23 936.9(i); protect, maintain, and restore trees (especially conifers), snags,  
24 or downed large woody debris that currently, or may in the foreseeable  
25 future, provide large woody debris recruitment needed for instream habitat  
structure and fluvial geomorphic functions.

26         **(6)** Consistent with the requirements of 14 CCR § 916.9.2(e) and 14 CCR  
27 § 936.9.2(e); protect, maintain, and restore the quality and quantity of  
28 vegetative canopy needed to: (A) provide shade to the watercourse or lake,  
29 (B) minimize daily and seasonal temperature fluctuations, (C) maintain daily  
30 and seasonal water temperatures within the preferred range for coho salmon

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where they are present or restorable habitat exists, and (D) provide hiding cover and a food base where needed.

(7) Result in no substantial increases in peak flows or large flood frequency.

(b) Pre-plan adverse cumulative watershed effects on the populations and habitat of coho salmon shall be considered. The plan shall specifically acknowledge or refute that such effects exist. Where appropriate, the plan shall set forth measures to effectively reduce such effects.

(c) (1) The plan shall fully describe:

(A) the type and location of each measure needed to fully offset sediment loading, thermal loading, and potential significant adverse watershed effects from the proposed timber operations, and

(B) the person(s) responsible for the implementation of each measure, if other than the timber operator.

(2) In proposing, reviewing, and approving such measures, preference shall be given to the following:

(A) measures that are both onsite (i.e., on or near the plan area) and in-kind (i.e., erosion control measures where sediment is the problem), and

(B) sites that are located to maximize the benefits to the impacted portion of a watercourse or lake. Out-of-kind measures (i.e., improving shade where sediment is the problem) shall not be approved as meeting the requirements of this subsection.

(d) Channel zone requirements

(1) There shall be no timber operations within the channel zone with the following exceptions:

(A) timber harvesting that is directed to improve salmonid habitat through the limited use of the selection or commercial thinning silvicultural methods with review and comment by DFG.

(B) timber harvesting necessary for the construction or reconstruction of approved watercourse crossings.

(C) timber harvesting necessary for the protection of public health and safety.

(D) to allow for full suspension cable yarding when necessary to transport logs through the channel zone.

(E) Class III watercourses where exclusion of timber operations is not needed for protection of coho salmon.

(2) In all instances where trees are proposed to be felled within the channel zone, a base mark shall be placed below the cut line of the harvest trees within the zone. Such marking shall be completed by the RPF that prepared the plan prior to the preharvest inspection.

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1       **(e) Class I Watercourse and Lake Protection Measures** - The following shall  
2 apply to all Class I watercourses and lakes within watersheds with coho  
3 salmon.

4           **(1)** Any timber operation or silvicultural prescription within 150 feet  
5 of any Class I watercourse or lake transition line shall have protection,  
6 maintenance, or restoration of the beneficial uses of water or the  
7 populations and habitat of coho salmon or listed aquatic or riparian-  
8 associated species as significant objectives.

9           **(2)** The minimum WLPZ width for Class I watercourses and lakes shall be  
10 150 feet from the watercourse or lake transition line.

11           **(A)** Where a proposed plan is located within the Sacramento river  
12 drainage, and the Director and DFG concur; the RPF may explain and justify  
13 other WLPZ widths on areas where evenaged regeneration methods, seed tree  
14 removal, shelterwood removal, alternative prescriptions, or rehabilitation  
15 shall not be utilized adjacent to watercourse and lake protection zones and  
16 where watercourse sideslopes are less than 30 percent.

17           **(3)** For Class I watercourses and lakes, any plan involving timber  
18 operations within the WLPZ shall contain clear and enforceable specifications  
19 of how any disturbance or log or tree cutting and removal within the Class I  
20 WLPZ shall be carried out to conform with 14 CCR §§ 916.2 [936.2](a) and  
21 916.9 [936.9](a).

22           **(4)** Within a WLPZ for Class I watercourses and lakes, at least 85  
23 percent overstory canopy shall be retained within 75 feet of the watercourse  
24 or lake transition line, and at least 65 percent overstory canopy within the  
25 remainder of the WLPZ. The overstory canopy must be composed of at least 25  
percent overstory conifer canopy post-harvest.

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1           **(A)** Where a proposed plan is located within the Sacramento river  
2 drainage, and the Director and DFG concur; the RPF may explain and justify  
3 other canopy retention standards on areas where even aged regeneration  
4 methods, seed tree removal, shelterwood removal, alternative prescriptions,  
5 or rehabilitation shall not be utilized adjacent to watercourse and lake  
6 protection zones and where watercourse sideslopes are less than 30 percent.

7           **(5)** Within a WLPZ for Class I watercourses and lakes, harvesting of  
8 hardwoods shall only occur for the purpose of enabling conifer regeneration.

9           **(6)** Within a WLPZ for Class I watercourses and lakes, sufficient trees  
10 shall be retained to maintain the preharvest level of direct shading to  
11 pools. The percentage of shade provided by Group A species shall not be  
12 reduced relative to other species.

13           **(7)** Recruitment of large woody debris for aquatic habitat in Class I  
14 coho salmon-bearing watercourses or other restorable habitat shall be ensured  
15 by retaining the ten (10) largest dbh conifers (live or dead) per 330 feet of  
16 stream channel length on each side of the watercourse to provide for the  
17 beneficial functions of riparian zones. The retained conifers shall be  
18 selected from within the plan area that lies within 100 feet of the  
19 watercourse transition line. Where the plan boundary is an ownership  
20 boundary, a class I watercourse, and the WLPZ on both sides of the  
21 watercourse currently meets the stocking standards listed under 14 CCR §  
22 912.7(b)(2); the ten (10) largest dbh conifers (live or dead) per 330 feet of  
23 stream channel length that provide for the beneficial functions of riparian  
24 zones within the plan area shall be retained within 100 feet of the  
25 watercourse transition line.

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1       (7) Where an inner gorge extends beyond a Class I WLPZ and slopes are  
2 greater than 55 percent, a special management zone shall be established where  
3 the use of evenaged regeneration methods is prohibited. This zone shall  
4 extend upslope to the first major break-in-slope to less than 55 percent for  
5 a distance of 100 feet or more, or 300 feet as measured from the watercourse  
6 or lake transition line, which ever is less. All operations on slopes  
7 exceeding 65 percent within an inner gorge of a Class I or II watercourse  
8 shall be reviewed by a Professional Geologist prior to plan approval,  
9 regardless of whether they are proposed within a WLPZ or outside of a WLPZ  
10 and disclosed and incorporated in the plan as appropriate.

11       (8) For evenaged regeneration methods and rehabilitation with the same  
12 effects as a clearcut that are adjacent to a Class I WLPZ, a special  
13 operating zone shall retain understory and mid-canopy conifers and hardwoods.  
14 These trees shall be protected during falling, yarding and site preparation  
15 to the extent feasible. If trees that are retained within this zone are  
16 knocked down during operations, that portion of the trees that is greater  
17 than 6" in diameter shall remain within the zone as Large Woody Debris. The  
18 zone shall be 25 feet above Class I WLPZs with watercourse sideslopes 0-30  
19 percent and 50 feet above Class I WLPZs with watercourse sideslopes > 30  
20 percent.

21       **(f) Class II Watercourse and Lake Protection Measures - The following**  
22 **shall apply to all Class II watercourses and lakes mapped on current 1:24,000**  
23 **scale U.S. Geological Survey topographic map within watersheds with coho**  
24 **salmon.**

25       (1) Any timber operation or silvicultural prescription within 100 feet  
of any Class II watercourse or lake transition line shall have protection,

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1 maintenance, or restoration of the beneficial uses of water or the  
2 populations and habitat of anadromous salmonids or listed aquatic or  
3 riparian-associated species as significant objectives.

4 **(2)** Where an inner gorge extends beyond a Class II WLPZ and watercourse  
5 sideslopes are greater than 55 percent, a special management zone shall be  
6 established where the use of evenaged regeneration methods is prohibited.  
7 This zone shall extend upslope to the first major break-in-slope to less than  
8 55 percent for a distance of 100 feet or more, or 200 feet as measured from  
9 the watercourse or lake transition line, which ever is less. All operations  
10 within the special management zone shall be reviewed by a Professional  
11 Geologist prior to plan approval and disclosed and incorporated in the plan  
12 as appropriate.

13 **(3)** The following shall apply to all WLPZs on Class II watercourses  
14 that are tributary to Class I watercourses with coho salmon in the planning  
15 watershed where timber operations are proposed or the planning watershed  
16 immediately downstream except as provided under 14 CCR § 916.9.2 [936.9.2]

17 **(b)(3)(E):**

18 **(A)** Inner Band: From 0-50 feet, retain a minimum of 85 percent post-  
19 harvest overstory canopy. The overstory canopy must be composed of at least  
20 25 percent overstory conifer canopy post-harvest.

21 **(B)** Outer Band with 0-30 percent watercourse sideslope: From 50-75  
22 feet, retain a minimum of 65 percent post-harvest overstory canopy. The  
23 overstory canopy must be composed of at least 25 percent overstory conifer  
24 canopy post-harvest.

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1 (C) Outer Band with 31-50 percent watercourse sideslope: From 50-100  
2 feet, retain a minimum of 65 percent post harvest overstory canopy. The  
3 overstory canopy must be composed of at least 25 percent overstory conifer  
4 canopy post-harvest.

5 (D) Outer Band with >50 percent watercourse sideslope: From 50-125  
6 feet, retain a minimum of 65 percent post-harvest overstory canopy. WLPZ  
7 width may be reduced to 100 feet for helicopter or cable yarding operations.  
8 The overstory canopy must be composed of at least 25 percent overstory  
9 conifer canopy post-harvest.

10 (E) 14 CCR § 916.9.2 [936.9.2] (b)(3)(B)(C) and (D) do not apply to  
11 plans in the Southern Subdistrict of the Coast Forest District or to NTMPs  
12 within watersheds with coho salmon.

13 (g) Class III Watercourse Protection Measures - The following shall apply to  
14 all Class III watercourses within watersheds with coho salmon in or adjacent  
15 to harvest units where evenaged management, rehabilitation of under-stocked  
16 stands, or variable retention prescriptions are proposed.

17 (1) retain all trees situated within the channel zone and trees that  
18 have boles that overlap the edge of the channel zone;

19 (2) within the ELZ, at least 50 percent of the understory vegetation  
20 shall be left post-harvest in an evenly distributed condition;

21 (3) within the ELZ; retain all snags, large woody debris, and  
22 countable trees 10 inches dbh or less, except where necessary to allow for  
23 cable yarding corridors, safety, or crossing construction;

24 (4) within the ELZ, prohibit initiation of any burning;

25 (5) allow cable yarding when necessary to transport logs through a  
Class III ELZ;



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(6) tractor yarding is prohibited, except for the use of feller-bunchers and shovel yarding that minimize soil compaction and disturbance and;

(7) retain at least 15 square feet basal area per acre of hardwoods where it exists before harvest, including the largest hardwoods available for this purpose. Retain all hardwoods when less than 15 square feet basal area per acre is present before harvest.

(h) Where harvesting is proposed on a connected headwall swale:

(1) only the selection regeneration method allowed under 14 CCR § 913.2 [933.2] (a) (2) (A) or the commercial thinning intermediate treatment allowed under 14 CCR § 913.3 [933.3] (a) may be utilized in that area,

(2) Areas of ground based yarding shall be delineated on the ground as an equipment limitation zone and marked prior to the preharvest inspection.

(3) All proposed road construction or reconstruction shall be reviewed by a Professional Geologist and disclosed and incorporated in the plan as appropriate prior to plan approval. (g) From October 15 to May 1, no timber operations shall take place unless the approved plan incorporates a complete winter period operating plan pursuant to 14 CCR § 914.7(a) [934.7(a)]

(i) Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into waters in amounts deleterious to aquatic species or the quality and beneficial uses of water, or that threaten to violate applicable water quality requirements, shall be applied in accordance with the following standards:

(1) The following requirements shall apply to all such treatments.

(A) They shall be described in the plan.

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1       **(B)** For areas disturbed from May 1 through October 15, treatment  
2 shall be completed prior to the start of any rain that causes overland flow  
across or along the disturbed surface.

3       **(C)** For areas disturbed from October 16 through April 30, treatment  
4 shall be completed prior to any day for which a chance of rain of 30 percent  
or greater is forecast by the National Weather Service or within 10 days,  
whichever is earlier.

5       **(2)** The traveled surface of logging roads shall be treated to prevent  
waterborne transport of sediment and concentration of runoff that results  
from timber operations.

6       **(3)** The treatment for other disturbed areas, including:

7       **(A)** areas exceeding 100 contiguous square feet where timber  
operations have exposed bare soil,

8       **(B)** approaches to tractor road watercourse crossings between the  
drainage facilities closest to the crossing,

9       **(C)** road cut banks and fills, and

10       **(D)** any other area of disturbed soil that threatens to discharge  
sediment into waters in amounts deleterious to the quality and beneficial  
uses of water;

11 may include, but need not be limited to, mulching, rip-rapping, grass  
12 seeding, or chemical soil stabilizers. Where straw, mulch, or slash is used,  
13 the minimum coverage shall be 90 percent, and any treated area that has been  
14 subject to reuse or has less than 90 percent surface cover shall be treated  
15 again prior to the end of timber operations. The RPF may propose alternative  
16 treatments that will achieve the same level of erosion control and sediment  
17 discharge prevention.

18  
19       **(4)** Where the undisturbed natural ground cover cannot effectively  
20 protect beneficial uses of water from timber operations, the ground shall be  
treated by measures including, but not limited to, seeding, mulching, or  
21 replanting, in order to retain and improve its natural ability to filter  
sediment, minimize soil erosion, and stabilize banks of watercourses and  
lakes.

22  
23       **(j)** As part of the plan, the RPF shall identify active erosion sites in  
24 the logging area, assess them to determine which sites pose significant risks  
25 to the beneficial uses of water, assess them to determine whether feasible

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remedies exist, and address in the plan feasible remediation for all sites that pose significant risk to the beneficial uses of water.

(k) Site preparation activities shall be designed to prevent soil disturbance within, and minimize soil movement into, the channels of watercourses. Prior to any broadcast burning, burning prescriptions shall be designed to prevent loss of large woody debris in watercourses, and vegetation and duff within a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection. No ignition is to occur within any WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection. When burning prescriptions are proposed, the measures or burning restrictions which are intended to accomplish this goal shall be stated in the plan and included in any required burning permit. This information shall be provided in addition to the information required under 14 CCR § 915.4 [935.4].

(1) No timber operations are allowed in a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection, under exemption notices except for:

- (1) hauling on existing roads,
- (2) road maintenance,
- (3) operations conducted for public safety,
- (4) construction or reconstruction of approved watercourse crossings,
- (5) temporary crossings of dry Class III watercourses which do not require a "Streambed Alteration Agreement" under the Fish and Game Code; or
- (6) harvesting recommended in writing by DFG to address specifically identified forest conditions.

(1) No timber operations are allowed in a WLPZ, or within any ELZ or EEZ

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designated for watercourse or lake protection, under emergency notices except for:

- (1) hauling on existing roads,
- (2) road maintenance,
- (3) operations conducted for public safety,
- (4) construction or reconstruction of approved watercourse crossings,
- (5) temporary crossings of dry Class III watercourses which do not require a "Streambed Alteration Agreement" under the Fish and Game Code,
- (6) harvesting recommended in writing by DFG to address specifically identified forest conditions,
- (7) the harvest of dead or dying conifer trees subject to the following conditions:

(A) Recruitment of large woody debris for aquatic habitat in Class I coho salmon bearing or restorable waters shall be ensured by retaining the ten largest dbh conifers (live or dead) per 330 feet of stream channel length that are the most conducive to recruitment to provide for the beneficial functions of riparian zones. The retained conifers shall be selected from within the area of operations that lies within 50 feet of the watercourse transition line. Where the area of operations is bounded by an ownership boundary, a class I watercourse, and the WLPZ on both sides of the watercourse currently meets the stocking standards listed under 14 CCR § 912.7[932.7](b)(2)}; the five (5) largest dbh conifers (live or dead) per 330 feet of stream channel length that are the most conducive to recruitment to provide for the beneficial functions of riparian zones shall be retained within 50 feet of the watercourse transition line within the area of operations.

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1 The RPF may provide alternatives to substitute smaller diameter trees,  
2 trees that are more than 50 feet from the watercourse transition line, or  
3 other alternatives on a site specific basis. The RPF must provide with the  
4 notice an explanation and justification why the alternative provided is more  
5 conducive to current and long-term Large Woody Debris recruitment, shading,  
6 bank stability, and the beneficial functions of riparian zones.

7 (B) Within any WLPZ, ELZ, or EEZ designated for Class II or III  
8 watercourse protection, a minimum of two dead, dying, or diseased conifer  
9 trees per acre at least 16 inches diameter breast high and 50 feet tall shall  
10 be retained within 50 feet of the watercourse transition line.

11 (C) Trees to be harvested or retained shall be marked by, or under  
12 the supervision of, an RPF prior to timber operations within the WLPZ or  
13 ELZ/EEZ.

14 (D) Within the WLPZ or ELZ/EEZ, if the stocking standards of 14 CCR  
15 § 912[932].7 are not met upon completion of timber operations, unless the  
16 area meets the definition of substantially damaged timberlands, at least ten  
17 trees shall be planted for each tree harvested but need not exceed an average  
18 point count of 300 trees per acre.

19 (m) No salvage logging is allowed in a WLPZ.

20 (1) This section does not apply to emergency operations under 14 CCR §  
21 1052.

22 (n) Nonstandard practices (i.e., waivers, exceptions, in-lieu practices,  
23 and alternative practices) shall comply with the goal set forth in subsection  
24 (a) above as well as with the other requirements set forth in the rules.

25 (o) The Director may approve alternatives that provide equal or better  
protection for coho salmon and achieve the goal of this section.

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1       **(1)** Any alternative proposed under this subsection for timber  
2 operations in a watershed with coho salmon shall only be included in a plan:  
3 i) after consultation and written concurrence from DFG prior to plan  
4 submittal, and ii) with a clear demonstration of compliance with the issuance  
5 criteria described under Fish and Game Code § 2081(b) as determined by DFG.

6       **(2)** The Director shall not accept for inclusion in a plan any  
7 alternative practice as described in this section where two or more agencies  
8 listed in § 4582.6 of the PRC and 14 CCR § 1037.3 have submitted written  
9 comments which lead to the Director's conclusion that the proposed  
10 alternative will not meet the goal of this section and the agency(ies)  
11 participated in the review of the plan, including an on-the-ground  
12 inspection.

13       **(p)** Other measures that would effectively achieve the goal set forth in 14  
14 CCR § 916.9(a) [936.9(a)] may be approved **(i)** in accordance with 14 CCR §  
15 916.6 [936.6], or (ii) pursuant to a coho salmon watershed evaluation for  
16 timber operations when the plan incorporates minimization and mitigation  
17 measures based on the watershed evaluation, and with written concurrence from  
18 DFG. The watershed evaluation must include the components\_set forth below  
19 and shall be included in addition to all other District Forest Practice  
20 Rules.

21       **(1)** The following are required components of a watershed evaluation:

22               **(A)** Description of assessment area

23               **(B)** Status of coho salmon within each planning watershed in the  
24 assessment area

25               **(C)** Status of coho salmon habitat conditions and water quality  
within each planning watershed in the assessment area

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1           **(D)** Identification and prioritization of limiting factors. A

2 reasoned analysis shall assign ratings of high, moderate and low to those  
3 factors which may individually or cumulatively limit coho salmon distribution  
4 and abundance in the watershed.

5           **(E)** Proposed planning watershed specific management practices to

6 prevent or control discharges and environmental impacts from timber  
7 operations that could contribute to the identified high and moderate risk  
8 limiting factors, and; corrective actions that would reduce or eliminate the  
9 high and moderate risk limiting factors on the landscape and mitigate the  
10 impacts of timber operations which cause or contribute to those limiting  
11 factors.

12           **(F)** A plan and schedule for implementing proposed management

13 practices.

14           **(G)** A program for monitoring implementation and effectiveness of the

15 management practices and, where the plan is not effective in limiting or  
16 eliminating the limiting factors as planned an adaptive management strategy  
17 for changing the plan and schedule to ensure that limiting factors are  
18 reduced or eliminated in the watershed.

19           **(q)** The operational provisions of 14 CCR §§ 916.9 [936.9] and 916.9.2

20 [936.9.2] shall not apply to a plan under which the incidental take from  
21 timber operations coho salmon within the planning watershed is already  
22 authorized pursuant to the following:

23           **(1)** a valid incidental take permit issued by DFG pursuant to Section

24 2081(b) of the Fish and Game Code; or  
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1       **(2)** a federal incidental take statement or incidental take permit, for  
2 which a consistency determination has been made pursuant to Section 2080.1 of  
3 the Fish and Game Code; or

4       **(3)** Section 2835 of the Fish and Game Code under a valid natural  
5 community conservation plan approved by DFG; or

6       **(r)** The operational provisions of 14 CCR §§ 916.9 [936.9] and 916.9.2  
7 [936.9.2] shall not apply to a plan that specifies project revisions,  
8 guidelines, or take avoidance measures pursuant to a memorandum of  
9 understanding or a planning agreement entered into between the plan submitter  
10 and DFG, which DFG has determined will avoid take of coho salmon.



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**Adopt New 14 CCR § 916.11.1 and 936.11.1 Monitoring for Adaptive Management  
in Watersheds with Coho Salmon**

**(a)** Goal: The Board will develop a monitoring and adaptive management program for timber harvesting operations in watersheds with coho salmon. The purpose of the program will be: (i) to determine whether or not the operational Forest Practice Rules and associated hillslope and instream mitigation measures afford a level of protection that is both appropriate and adequate to ensure protection of coho salmon and its habitat, (ii) to provide monitoring necessary to ensure the Forest Practice Rules are being implemented in a manner consistent with the California Endangered Species Act as required under 14 CCR § 896, and (iii) to provide a timely feedback process for the Board to assess rule effectiveness in meeting the stated goals under subsections (i) and (ii).

**(1)** The monitoring component of the program will provide the information necessary to evaluate the effectiveness of mitigation measures and identify when site-specific mitigation or operational rules should be revised to better accomplish the goals of the Board.

**(A)** Four types of monitoring will be addressed under the program including: (i) compliance, (ii) implementation, (iii) effectiveness, and (iv) validation.

**(B)** Review Team agencies will continue to conduct mandated compliance and implementation monitoring as part of their regulatory responsibilities.

**(C)** Effectiveness monitoring will be undertaken by the landowner; or be a cooperative effort between landowners and the Department, Review Team agencies, or a cooperative interdisciplinary team.

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1 (D) Long-term validation monitoring will be undertaken by the  
2 landowner, or facilitated through cooperative agreements among stakeholders  
3 and the agencies. This includes monitoring the species' responses.

4 (E) The Board or its designee may include any monitoring that meets  
5 the intent of this section, including any efforts that are already underway  
6 by the landowner, agencies or other cooperators.

7 (2) The adaptive management component of the program will be a process  
8 of action-based planning, monitoring, evaluating and adjusting through use of  
9 the scientific method; with the objective of improving habitat conditions and  
10 facilitating conservation of listed coho salmon.

11 (A) Four elements of adaptive management will be addressed under the  
12 program including: (i) identification of substantial new information, (ii)  
13 collection of substantial new information, (iii) evaluation of substantial new  
14 information, and (iv) determination regarding the necessity or benefit of  
15 adjustments and improvements to mitigation and protective measures, including  
16 the Forest Practice Rules, based upon the substantial new information.

17 (b) The monitoring requirements listed under 14 CCR § 916.11 [936.11,  
18 956.11](b)(1) through (b)(5) or 14 CCR § 916.11 [936.11, 956.11](b)(5) and  
19 (b)(6) shall apply to timber harvesting operations in watersheds with coho  
20 salmon in addition to the inspection requirements outlined in PRC § 4604:

21 (1) In collaboration with other Review Team agencies, the Director  
22 shall develop monitoring practices to evaluate the effectiveness of  
23 mitigation measures at the appropriate scale, on a case-by-case basis.

24 (A) In development of monitoring practices, the Director may also  
25 engage other experts in the field for assistance.

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1 (B) The monitoring practices will be applied by the landowner; or be  
2 a cooperative effort between landowners and the Department, Review Team  
3 agencies, or a cooperative interdisciplinary team.

4 (2) Monitoring practices and strategies may be peer reviewed by a  
5 scientific technical advisory committee as directed by the Board.

6 (3) The design and implementation of monitoring shall be done in  
7 consultation with the Department and other Review Team agencies, and the  
8 sufficiency of information shall be judged in light of its scientific merit  
9 and what is reasonable and practical.

10 (A) Monitoring data shall be derived from agency monitoring  
11 programs, landowner monitoring programs, or cooperative projects.

12 (4) As a condition of plan approval, based upon substantial evidence in  
13 the record, the Director may require monitoring:

14 (A) Anytime after plan approval,

15 (B) Concurrent with timber operations, and

16 (C) After completion of operations during the remainder of the  
17 prescribed maintenance period.

18 (5) Monitoring data collected pursuant to (b)(4) or (b)(6) shall be  
19 provided to the Director annually.

20 (6) The plan shall incorporate monitoring requirements in conformance  
21 with the requirements of a valid incidental take permit for coho salmon  
22 within the planning watershed that has been authorized pursuant to the  
23 following:

24 (A) a valid incidental take permit issued by DFG pursuant to Section  
25 2081(b) of the Fish and Game Code; or

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1 (B) a federal incidental take statement or incidental take permit,  
2 for which a consistency determination has been made pursuant to Section  
3 2080.1 of the Fish and Game Code; or

4 (C) Section 2835 of the Fish and Game Code under a valid natural  
5 community conservation plan approved by DFG; or

6 (c) The Department shall prepare an annual report in conjunction with a  
7 Board appointed technical subcommittee summarizing progress and significant  
8 findings from monitoring activities collected throughout the year in  
9 accordance with subsection (b)(4) above. The report shall be (i) provided to  
10 the Board during the first quarter of each calendar year, (ii) made available  
11 to the public upon request, and (iii) placed on the Board's website for at  
12 least 180 days.

13 (d) Based upon the findings presented in the annual monitoring report(s),  
14 the Director may recommend additions, deletions or modifications to the  
15 Forest Practice Rules if the necessity for such a change is supported by  
16 substantial evidence in the reports. A specific recommendation based upon  
17 the findings that a rule requirement is no longer necessary shall also be  
18 supported by substantial evidence.

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1 **Adopt New 14 CCR §§ 923.9.1 and 943.9.1 Intent and Scope of Application of**  
2 **Minimization and Mitigation Measures for Roads and Landings in Watersheds**  
3 **with Coho Salmon**

4 (a) The minimization and mitigation measures for roads and landings in  
5 watersheds with coho salmon are intended to serve the following purposes:

6 (1) To streamline and facilitate the process of obtaining incidental  
7 take permits for state-listed coho salmon from DFG for timber operations  
8 under the California Endangered Species Act (Fish & G. Code, § 2050 et seq.);

9 (2) To minimize potential cumulative effects of timber operations in  
10 watersheds with coho salmon for the state's timber harvest permitting  
11 program; and

12 (b) The scope of application of the minimization and mitigation measures  
13 for roads and landings in watersheds with coho salmon is as follows:

14 (1) In addition to all other District Forest Practice Rules, in any  
15 watershed with coho salmon, the minimization and mitigation measures for  
16 roads and landings in watersheds with coho salmon shall apply to all timber  
17 operations where DFG determines that take will, or is likely to result from  
18 such proposed timber operations, unless an incidental take of coho salmon is  
19 already authorized as specified under 14 CCR § 923.9 [943.9, 963.9](1).

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**Adopt New 14 CCR §§ 923.9.2 and 943.9.2 Minimization and Mitigation Measures  
for Roads and Landings in Watersheds with Coho Salmon**

**(a)** An assessment of road surface and drainage conditions for all road segments within the plan area and appurtenant to proposed operations shall be included in the plan.

**(1)** The assessment shall contain a list of site-specific, field inventory information including proposed treatment of existing or potential sediment sources for all crossings, ditch relief culverts, road surfaces, road cuts, road fills, landings, turnouts and inboard ditches.

**(A)** Field inventory information shall be obtained by an RPF or supervised designee while traversing the road segments.

**(2)** The assessment shall be subject to approval by the Director, with written concurrence by DFG. Additional field inventory, work sites, and/or alternative treatments may be required.

**(3)** The results of the road assessment shall be used to, construct, reconstruct, or decommission road segments prior to filing a work completion report. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.

**(b)** Within WLPZs, any new road or landing construction, reconstruction, new watercourse crossings, use of Class I fords or opening of old roads (except for the purpose of decommissioning) will be subject to approval by the Director, with written concurrence by DFG. The Director will only approve such practices where protection for aquatic habitat provided by proposed practices is at least equal to the protection provided by the use of alternate routes or locations outside of the WLPZ.

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1 (c) The guidelines and performance standards for road decommissioning  
2 methods described in the California Salmonid Stream Habitat Restoration  
3 Manual, 1998, 3<sup>rd</sup> edition; pages X-53 through X-59 (published by State of  
4 California, Resources Agency, California Department of Fish and Game) shall  
5 be followed.

6 (d) The following design features shall be included in the maintenance,  
7 construction, reconstruction, or decommissioning of roads, except where site-  
8 specific alternatives are explained, justified, and approved by the Director,  
9 with written concurrence by DFG. The Director may only approve alternatives  
10 where the consequences for aquatic habitat are no greater than would result  
11 from the standard measures. Except for maintenance needs that arise from  
12 October 15 to June 1, all work described below shall be completed before  
13 October 15 in the year that work begins.

14 (1) Road surfaces shall be outsloped with rolling dips, wherever  
15 feasible.

16 (2) All road segments shall be hydrologically disconnected, to the  
17 extent feasible, from watercourses and lakes by site specific application of  
18 the following: outsloping, rocking, installation of rolling dips, cross  
19 drains, and/or waterbars, except where site-specific alternatives are  
20 explained and justified in the plan, and approved by the Director, with  
21 written concurrence by DFG. All of these features shall drain to stable  
22 sediment filter strips.

23 (3) Crossings and associated fills shall be removed or reconstructed  
24 where there is evidence of failure potential or sediment delivery to Class I,  
25 II, or III watercourses and lakes.

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1 (4) Culverts shall be replaced or removed if they are crushed,  
2 perforated, piping, separated, not adequate to carry water from the fifty-  
3 year flood level, located in unstable fill, or causing erosion that may be  
4 expected to deliver sediment to Class I, II, or III watercourses and lakes.  
5 Replaced culverts shall be installed at or as close to the original stream  
6 grade and slope as feasible.

7 (5) Each road approach to a watercourse crossing shall be treated to  
8 create and maintain a stable operating surface, and to avoid the generation  
9 of fines during use, in accordance with subsection (A) through (F) below.  
10 The road approach encompasses either of the following areas, whichever is  
11 less:

12 (i) the area from the watercourse channel to the nearest drainage  
13 facility, but not less than 50 feet; or

14 (ii) the area from the watercourse channel to the first high point  
15 on the road where road drainage flows away from the watercourse.

16 (A) Road surfaces on the following shall consist of high-quality,  
17 durable, compacted rock or paving:

18 (i) permanent roads

19 (ii) seasonal roads crossing Class I watercourses

20 (iii) roads used for hauling (logs, rock, heavy equipment)  
21 from October 15 to June 1.

22 (B) Road surfaces on the following shall be treated with either:  
23 rock, slash, seed and straw mulch, seed and stabilized straw, or seed and  
24 slash:

25 (i) all seasonal roads used for hauling in the current year



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1 (ii) all seasonal roads used from October 15 to June 1 for  
2 purposes other than hauling

3 (C) Approaches to temporary crossings shall be rocked as needed  
4 after crossing removal to avoid rutting or pumping fines during use.

5 (D) Ditches exhibiting downcutting along the following shall be  
6 lined with high-quality, durable rock:

7 (i) permanent roads

8 (ii) seasonal roads crossing Class I watercourses

9 (iii) roads used for hauling from October 15 to June 1.

10 (E) Ditches along the following shall be treated to prevent  
11 scour:

12 (i) seasonal roads used for hauling in the current year

13 (ii) seasonal roads used from October 15 to June 1 for  
14 purposes other than hauling.

15 (F) Bare soil on associated fill slopes, shoulders and cuts shall  
16 be treated to minimize erosion.

17 (6) Sediment discharge from unstable or eroding cutbanks, fillslopes  
18 and landing fills will be prevented by pulling, buttressing, or other means  
19 and by installing and maintaining effective erosion control materials.

20 (7) Bridges (including associated fill, rip rap, and abutments) and  
21 bridge approaches showing evidence of failure potential or sediment delivery  
22 to Class I, II, or III watercourses and lakes shall be repaired, replaced, or  
23 removed.

24 (e) Erosion control materials shall be applied in sufficient quantity  
25 prior to the onset of measurable precipitation with re-application as needed

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1 to avoid any visible increase in surface erosion or turbidity in Class I, II  
2 or III receiving watercourses and lakes.

3 (f) All roads in Class I WLPZs shall exhibit a rocked or paved stable  
4 operating surface. The surface shall consist of high quality, durable,  
5 compacted rock, or paving. The road surface and base shall be maintained to  
6 avoid generation of fines during use.

7 (g) (1) No road or landing construction, reconstruction, or  
8 decommissioning shall be undertaken from October 15th to May 15th, or at any  
9 time outside this period when saturated soil conditions exist, except as  
10 provided in subsection (2) or (3).

11 (2) No road or landing construction, reconstruction, or  
12 decommissioning shall be undertaken from October 15th to June 1st, or at any  
13 time outside this period when saturated soil conditions exist within (i) all  
14 planning watersheds that drain into the Mattole watershed, (ii) all planning  
15 watersheds wholly or partially contained within Del Norte County, and (iii)  
16 the following specified planning watersheds in Humboldt County; where average  
17 May rainfall exceeds three inches.

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CALWATER 2.2	ID Number	Coho Status	Acres
Planning Watershed			
McGarvey Creek	1105.110806	Present	13442.2
May Creek	1107.100201	Present	11242.8
Lost Man Creek	1107.100104	Present	12704.5
Skunk Cabbage Creek	1107.100203	Present	4855.1
McArthur Creek	1107.100103	Present	6814.1
McDonald Creek	1108.100002	Present	23879.8
Bond Creek	1107.100102	Present	8200.5
Tarup Creek	1105.110703	Present	12429.2
Pitcher Creek	1108.100001	Present	13179.4
Maple Creek	1108.100003	Present	16841.5
Ah Pah Creek	1105.110702	Present	10771.8
Bridge Creek	1107.100101	Present	15055.9

(3) The RPF may propose site-specific exceptions that are explained and justified in the plan, and approved by the Director, with written concurrence by DFG. The Director will only approve exceptions where the protection provided for aquatic habitat by the proposed practices is at least equal to the protection provided by the above time period or conditions. Access without specific approval by the Director is allowed to correct emergency, road-related problems demanding immediate action.

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1 (h) Use of unpaved roads shall cease when precipitation is sufficient to  
2 generate overland flow off the road surface, use of any portion of the road  
3 results in rutting of the road surface, or a stable operating surface can not  
4 be maintained.

5 (i) (1) Resumption of road use shall only occur when there is a stable  
6 operating surface.

7 (2) Resumption of road or landing construction or reconstruction,  
8 shall not occur until the soil conditions allow a stable operating surface to  
9 be developed.

10 (j) (1) All roads within the plan area and appurtenant to proposed  
11 operations shall be inspected

12 (A) by the LTO at least twice annually - once between June 1st and  
13 October 15th and at least once after October 15th following the first storm  
14 event producing bankfull stage- prior to completion of operations;

15 (B) by the timberland owner during the same time period for the  
16 remainder of the prescribed maintenance period.

17 (2) The inspection shall be started as soon as conditions permit access  
18 (in accordance with 14 CCR § 923.9.2 [943.9.2](i)) to ensure that drainage  
19 structures and facilities are functioning to hydrologically disconnect the  
20 road prism from waters.

21 (3) Inspection results and follow up corrective measures shall be  
22 documented and shall be provided to CDF and DFG.

23 (k) Decommissioned roads shall be inspected following the first storm  
24 event producing bankfull stage after decommissioning and again prior to  
25 filing the completion report. The purpose of the inspection will be to  
verify the effectiveness of treatments in preventing sediment discharges to

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1 waters and to ensure treatments are functioning to restore natural drainage  
2 and hillslope stability. If treatments are found to be ineffective prior to  
3 the end of the prescribed maintenance period, further treatments shall be  
4 applied if the volume of sediment prevented from entering a channel by  
5 additional treatments is greater than that incurred by re-entering the site.

6 (1) During road inspection and maintenance, measures shall be employed to  
7 ensure the following: waterbars fully capture run-off from road surfaces and  
8 discharge it without gully formation or sediment delivery to waters; culverts  
9 (including crossdrains) are not occluded by debris; inboard ditches are not  
10 downcutting or scouring; cutbank erosion is minimized, and the fine sediment  
11 present on road surfaces is prevented from delivery to Class I, II, or III  
12 watercourses and lakes.

13 (m) Routine corrective work that prevents diversion of water from a  
14 watercourse or ditch or helps maintain a stable operating surface (e.g.,  
15 repairing inboard ditches, cross drains, water bars, road surface and fill,  
16 unblocking of culverts) shall be performed as soon as possible, regardless of  
17 the time of year. Vehicle access for routine corrective work shall only be  
18 permitted in accordance with 14 CCR § 923.9.2 [943.9.2](i). Other  
19 maintenance needs of lower priority shall be undertaken between June 1st and  
20 October 15th.

21 (n) Forest floor discharge sites below the outlets of drainage facilities  
22 on all roads within the plan area and appurtenant to proposed operations  
23 shall be inspected by the LTO for evidence of sediment delivery to Class I,  
24 II, or III watercourses and lakes at least twice annually; once between June  
25 1 and October 15, and at least once after October 15 following the first  
storm event producing bankfull stage discharges prior to filing the notice of

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completion report. If evidence of sediment delivery is present, additional cross drains, waterbars, or rolling dips shall be installed to reduce the discharge volume to the site.

(o) Grading of road surfaces shall occur only when necessary to achieve a uniform, stable, and well-drained operating surface. Inboard ditches shall be graded only when they are blocked or lack adequate inside ditch hydraulic capacity, or driver safety is a concern. Where feasible, blading the segment of ditch between the watercourse and first drainage facility shall be avoided.

(p) All tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following yarding and prior to either:

(1) the start of any rain which causes overland flow across or along the disturbed surface within a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection, or

(2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.

(q) The erosion control maintenance period on permanent and seasonal roads and associated landings that are not abandoned in accordance with 14 CCR § 923.8 [943.8, 963.8] shall be three years.

(r) Water drafting for timber operations from within a channel zone of a natural watercourse or from a lake shall conform with the following standards:

(1) The RPF shall incorporate into the plan:

(A) a description and map of proposed water drafting locations,

(B) the watercourse or lake classification, and

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(C) the general drafting location use parameters (i.e., yearly timing, estimated total volume needed, estimated total uptake rate and filling time, and associated water drafting activities from other plans).

(2) On Class I and Class II watercourse where the RPF has estimated that:

(A) bypass flows are less than 2 cubic feet per second, or

(B) pool volume at the water drafting site would be reduced by 10 percent, or

(C) diversion rate exceeds 350 gallons per minute, or

(D) diversion rate exceeds 10 percent of the above surface flow; no water drafting shall occur unless the RPF prepares a water drafting plan to be reviewed and, if necessary a streambed alteration agreement issued, by DFG and approved by the Director. The Director may accept the project description and conditions portion of an approved "Streambed Alteration Agreement" issued under the Fish and Game Code (F&GC 1600 et seq.) which is submitted instead of the water drafting plan described in 14 CCR § 916.9 [936.9, 956.9] (r)(2)(D)(1-5).

The water drafting plan shall include, but not be limited to:

1. disclosure of estimated percent streamflow reduction and duration of reduction,

2. discussion of the effects of single pumping operations, or multiple pumping operations at the same location,

3. proposed alternatives and discussion to prevent adverse effects (e.g. reduction in hose diameter, reduction in total intake at one location, described allowances for recharge time, and alternative water drafting locations),

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1           4. conditions for operators to include an operations log kept on  
2 the water truck containing the following information: Date, Time, Pump Rate,  
3 Filling Time, Screen Cleaned, Screen Conditions, and Bypass flow  
4 observations,

5           5. a statement by the RPF for a pre-operations field review with  
6 the operator to discuss the conditions in the water drafting plan.

7           (3) Intakes shall be screened in Class I and Class II watercourses and  
8 lakes. Screens shall be designed to prevent the entrainment or impingement of  
9 all life stages of fish or amphibians. Screen specifications shall be  
10 included in the plan.

11           (4) Approaches to drafting locations within a WLPZ shall be treated in  
12 accordance with the provisions of 14 CCR § 923.9.2 [943.9.2](d)(5).

13           (s) The operational provisions of 14 CCR §§ 923.9 [943.9] and 923.9.2  
14 [943.9.2] shall not apply to a plan under which the incidental take from  
15 timber operations of coho salmon within the planning watershed is already  
16 authorized pursuant to the following:

17           (1) a valid incidental take permit issued by DFG pursuant to Section  
18 2081(b) of the Fish and Game Code; or

19           (2) a federal incidental take statement or incidental take permit, for  
20 which a consistency determination has been made pursuant to Section 2080.1 of  
21 the Fish and Game Code; or

22           (3) Section 2835 of the Fish and Game Code under a valid natural  
23 community conservation plan approved by DFG; or

24           (t) The operational provisions of 14 CCR §§ 923.9 [943.9] and 923.9.2  
25 [943.9.2] shall not apply to a plan that specifies project revisions,  
guidelines, or take avoidance measures pursuant to a memorandum of



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1 understanding or a planning agreement entered into between the plan submitter  
2 and DFG, which DFG has determined will avoid take of coho salmon.